REMARKS

By the present Amendment, Claims 2, 12, 14, 19-21, 24-26, and 60-61 are currently amended and new claims 62-64 are added. Claims 7, 8, and 32-38 are cancelled without prejudice or disclaimer by the present Amendment, and Claims 1, 3-5, 9-11, 15-18, 22-23, 27-31, and 39-59 remain cancelled. Claims 6 and 13 are original. Support for the present amendments may be found, for example, in the original claims, sequence listing and specification, for example at page 11, line 26 through page 12, line 9 and page 30, lines 21-22.

Applicants thank Examiner Katherine Salmon and Supervisory Examiner Ram Shukla for the Personal Interview of July 28, 2008, and for the Examiners' comments, insights and guidance provided during the interview.

I. Priority

The Office Action mailed March 18, 2008 acknowledges that the present application is entitled to receive the benefit of priority to U.S. Application No. 60/155,422, filed September 23, 1999. Applicants thank the Office for this acknowledgement.

II. Withdrawn Objections

The Office Action mailed March 18, 2008 acknowledges that the objection to the specification made in Section 3 of the previous office action is moot. Applicants thank the Office for this acknowledgement.

III. Withdrawn Rejections

The Office Action mailed March 18, 2008 acknowledges that "[s]ome of the rejection made under 35 USC 112/2nd paragraph ... has been withdrawn.... In so much as the rejections still apply ... the rejections are reiterated below." Office Action at pages 4-5. As no 35 U.S.C. § 112, 2nd paragraph rejection has been reiterated, Applicants understand that no 112, 2nd paragraph rejections remain outstanding. Applicants thank the Office for this acknowledgement.

IV. Claim Objections

Claims 32-38 were objected to because "they depend from a cancelled claim". Office Action at page 5. In order to facilitate prosecution, Claims 32-38 have been cancelled by the present amendment. As such, Applicants respectfully request withdrawal of this objection.

V. Rejections Under 35 U.S.C. § 101

Claims 2, 6-8, 12-14, 19-21, 24-26, 32-38, and 60-61 were rejected under 35 U.S.C. § 101 as allegedly "not supported by either a credible asserted utility or a well established utility." Office Action at page 5. Applicants respectfully disagree with this allegation.

Claim 2 recites, *inter alia*, "[a] substantially purified nucleic acid molecule... comprising from about 30 to 300 nucleotide residues of the nucleic acid sequence of SEQ ID NO: 5272...." The Office acknowledges that according to the specification "...the claimed nucleic acids can be used to determine transcriptional profiling...." Office Action at page 7. In addition, the Office acknowledges that "[t]he specification further contemplates that the nucleic acid of SEQ ID NO: 5272 can be used for mapping studies, linkage analysis, constructing transgenic plants, and screening for traits or screening for polymorphisms...." *Id.* The Office suggests that these

utilities of SEQ ID NO: 5272 are not specific because "...all plant nucleic acids could be used for these purposes." *Id.* The uses of SEQ ID NO: 5272 are specific because they are specific to SEQ ID NO: 5272 and not generally applicable to any sequence.

As discussed during the July 28 Interview, Applicants' specification recites that identified sequences, which necessarily include for example SEQ ID NO: 5272, can act as regulatory elements and as genes. *See e.g.*, page 1, lines 19-26. Applicants' specification also notes the use of identified sequences to alter yield. *See e.g.*, page 2, lines 17-21. Applicants respectfully point out that the Office must accept these stated utilities in the absence of evidence or sound scientific reasoning to rebut Applicants' assertion. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

In addition, the present application has been awarded priority to U.S. Provisional Application 60/155,422, filed September 23, 1999 ("the '422 application), which was incorporated by reference in its entirety at the time of filing the present application. As discussed during the July 28 Interview, the '422 priority application identifies SEQ ID NO: 5272 (which is referred to as SEQ ID NO: 9911 in the '422 application) as a COL2 gene. *See e.g.*, Attachment D.[1]

As of the September 23, 1999 priority date of the captioned application, those skilled in the art were well aware that COL2 referred to a "CONSTANS-like" gene and showed significant homology to CONSTANS, where CONSTANS had been identified as a putative zinc finger transcription factor affecting growth, namely, flowering. *See e.g.*, Putterill, J. *et al.*, Cell 80:847-857 (1995) and Ledger, S.E. *et al.*, PGR 96-081 112:862 (1996). As such, Applicants

[1] Attachment D contains information excerpted from priority application 60/155,422. For the convenience of the Office, the column headers that appear at the beginning of the table from which Attachment D was excerpted have been carried over from the first page of the table where they appear and added to this Attachment.

respectfully submit that Applicants had established a specific, substantial, and credible utility for SEQ ID NO: 5272 at the time of filing.

Moreover, in the meantime, since filing, additional evidence further demonstrates that these specific and substantial utilities of SEQ ID NO: 5272, as recited at the time of filing the '422 priority application, are indeed accurate. For example, U.S. Patent Publication 2008/0010703 evidences the fact that the specific and substantial utilities stated in Applicants' specification as filed and in the '422 priority application are indeed utilities of SEQ ID NO: 5272. *See e.g.,* US 2008/0010703.

As detailed in U.S. Patent Publication 2008/0010703, G1988 is a nucleic acid sequence that differs by a single nucleotide from the corresponding region of SEQ ID NO: 5272. *See e.g.*, Attachment E. However, this nucleotide difference does not alter the encoded protein (*i.e.*, is a silent nucleotide change). As such, G1988 encodes the identical protein as the corresponding region of SEQ ID NO: 5272. *See id.* G1988 has been demonstrated to increase yield in plants, when yield is measured over 1, 2 and 3 year intervals. *See e.g.*, US 2008/0010703 at Figure 6 and Tables 12 and 13. Indeed, co-pending U.S. Application No. 11/821,448 evidences "significantly increased yield...." US 2008/0010703 A1 at paragraph [0037].

In sum, the claimed nucleotide sequence has utilities specific to it, and not simply general utilities applicable to any nucleic acid. The utilities of SEQ ID NO: 5272 are credible, substantial, and well-established; they are neither vague nor impractical. As Applicants need only establish a single utility to satisfy 35 U.S.C. § 101, they have undoubtedly satisfied 35 U.S.C. § 101 in the present case.

As discussed by Applicants during the July 28, 2008 Personal Interview with Examiner Salmon and Supervisory Examiner Shukla, specific and substantial utilities were provided by Applicants at the time of filing and these utilities satisfy the requirements of 35 U.S.C. § 101. Moreover, in the meantime, US 2008/0010703 has provided additional evidence of Applicants' utilities. Applicants' utilities, including for example, use for altering yield, have been clearly demonstrated for G1988 and the corresponding region of SEQ ID NO: 5272. *See e.g.*, Specification at page 2, lines 17-21; *see also* Attachment D.

Based on the foregoing, Applicants respectfully submit that the present application fulfills the legal requirements of 35 U.S.C. § 101, Utility. As such, Applicants request withdrawal of the utility rejection.

VI. Rejection under 35 U.S.C. § 112, Enablement

Claims 2, 6-8, 12-14, 19-21, 24-26, 32-38 and 60-61 were rejected under 35 U.S.C. § 112, first paragraph, as not being enabled by the specification, because the claimed invention allegedly lacks utility (*i.e.*, an invention with no utility cannot be enabled). Applicants respectfully traverse this rejection, and note that this rejection has been overcome by the foregoing arguments regarding utility. As such, reconsideration and withdrawal of the enablement rejection under 35 U.S.C. § 112, first paragraph is respectfully requested.

VII. Rejection under 35 U.S.C. § 112, Written Description

The Office rejected claims 2, 6-8, 12-14, 19-21, 24-26, 32-38 and 60-61 under 35 U.S.C. § 112, first paragraph, as allegedly "not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention." Office Action at page 17. Applicants respectfully disagree with this allegation.

By the Office Action, the Office argues that the claims "... do not define the nucleic acids in terms of their functional properties." *Id.* at page 18. The Office further argues that "... the specification fails to teach the necessary common attributes or features of the genus." *Id.* at page 20. However, Applicants know of no legal requirement to define a claimed nucleic acid in terms of its function. Moreover, Applicants respectfully submit that SEQ ID NO:5272 provides a common feature sufficient to satisfy the written description requirement for the claimed invention.

The Office Action suggests that the Office's written description rejection results from the Office's interpretation of Applicants' claims to include any complement, regardless of size. *See e.g.*, Office Action at page 22 (stating that "[t]he genus of claims include any fragment comprising SEQ ID No. 5272 comprising 30 to 300 nucleotide residues of SEQ ID No. 5272 and any complement which would include any sequence which shares any structure with SEQ ID No. 5272." (emphasis added)). At the Interview, the Office acknowledged that the written description rejection was based upon this interpretation of complement. Further, the Office acknowledged that a proposed amended claim including "about 30 to 300 nucleotide residues of a complement of the nucleic acid sequence of SEQ ID NO: 5272", as recited by the currently amended claims, would satisfy the written description requirements of 35 U.S.C. § 112. Applicants thank the Office for these acknowledgements and respectfully submit that the rejection under 35 U.S.C. § 112, written description, has been rendered moot as to the presently pending claims.

VIII. Rejections Under 35 U.S.C. § 102, Novelty

a. 102(a) Genbank Accession No. AP000604

Claims 2, 6 to 8, 60 and 61 were rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by GenBank Accession No. AP000604. Office Action at page 23 *et seq*. Applicants respectfully traverse this rejection.

According to the Office "priority is given to application 60/155422 and therefore the priority date is 9/23/1999." *Id.* at page 4. As such, GenBank Accession Number AP000604, dated October 15, 1999 comes after the September 23, 1999 priority date acknowledged by the Office. Accordingly, Applicants respectfully submit that GenBank Accession Number AP000604 cannot be anticipatory under 35 U.S.C. § 102(a).

Based on the foregoing, withdrawal of the rejection under 35 U.S.C. § 102(a) is requested.

b. 102(b) Brennan

Claims 2, 6-8, 12-14, and 60-61 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Brennan. Applicants respectfully traverse this rejection for at least the reasons that follow.

The Office alleges that "[t]he term 'complement' is not defined in the instant specification..." Office Action at page 29. Applicants respectfully disagree with the Office's allegation. Nonetheless, in order to facilitate prosecution the present claims have been amended to recite for example, "about 30 to 300 nucleotide residues of a complement of the nucleic acid sequence of SEQ ID NO: 5272".

As argued by the Office Action and acknowledged by the Office in the July 28 Interview, the rejection over Brennan was premised on the allegation that "... Brennan teaches every possible 10-mer." *See e.g.*, Office Action at page 30. However, as discussed at the July 28 Interview, whatever else Brennan may teach or suggest, it does not teach or suggest "about 30 to 300 nucleotide residues of the nucleic acid sequence of SEQ ID NO: 5272, or about 30 to 300 nucleotide residues of a complement of the nucleic acid sequence of SEQ ID NO: 5272", *i.e.*, Brennan does not teach or suggest a nucleic acid comprising at least about 30 nucleotide residues. Likewise, as respectfully pointed out by Applicants at the July 28 Interview, with regard to claims reciting a 98% identity, Brennan does not teach or suggest 98% of about 30 nucleic acids or about 29.4 nucleic acids.

Accordingly, Applicants respectfully submit that the presently pending claims cannot be anticipated by Brennan, and Applicants request withdrawal of the Office's rejection under 35 U.S.C § 102(b).

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is now in condition for allowance, and respectfully request notice of such. The Examiner is encouraged to contact the undersigned at 202-942-5325 if any additional information is necessary for allowance.

Respectfully submitted,

Date: August 21, 2008

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Holly L. Prutz (Reg. No. 47,755)
Lisa A. Adelson (Reg. No. 51,204)

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Facsimile: 202-942-5999

ATTACHMENT D

Seq_Num	Contig Id	Gene Id	Position	Hit Id	AAT nap Score	Blast Score	Blast pvalue	%ident	%Cvrg	Hit Description
9902	ATL8C11158	ATL8On11837	291-1	g4586265	159	150	1.3e-10	37	38	(AL049640) putative protein [Arabidopsis thaliana]
9903	ATL8C6899	ATL8On11838	1203-686	g3406785	873	872	3.0e-87	94	51	(AC006532) hypothetical protein [Arabidopsis thaliana]
9904	ATL8C11157	ATL8On11839	1-406	g465975	214	286	1.1e-24	52	21	PUTATIVE ATP-DEPENDENT RNA HELICASE T26G10.1 IN CHROMOSOME III []
9905	ATL8C6893	ATL8On11840	1-1761	g3219271	409	557	7.2e-56	43	80	(AB015315) MAP kinase kinase 4 [Arabidopsis thaliana]
9906	ATL8C28545	ATL8On11841	678-522	g3047086	192	227	1.2e-17	71	6	(AF058914) similar to reverse transcriptase (Plant transcript_fact.hmm, score: 72.51) [Arabidopsis thaliana]
9907	ATL8C28548	ATL8On11842	762-1	g4741194	458	624	5.7e-61	77	22	(AL049746) ABC transporter-like protein [Arabidopsis thaliana]
9908	ATL8C28549	ATL8On11843	588-405	g4204269	704	505	4.7e-47	81	12	(AC005223) 64111 [Arabidopsis thaliana]
9909	ATL8C28547	ATL8On11844	306-1000	g4417310	457	344	3.2e-31	65	33	(AC006446) putative Athila retroelement ORF1 protein [Arabidopsis thaliana]
9909	ATL8C28547	ATL8On11845	816-1000	g3319352	258	184	4.3e-13	84	7	(AF077407) No definition line found [Arabidopsis thaliana]
9910	ATL8C28544	ATL8On11846	109-2289	g3242708	3325	2860	6.5e-298	97	95	(AC003040) putative serine/threonine protein kinase [Arabidopsis thaliana]
9911	ATL8C44585	ATL8On11847	3472-4138	g4501099	83	104	2.8e-41	34	27	(AB011481) COL2 [Arabidopsis thaliana]
9912	ATL8C44586	ATL8On11848	468-225	g2245058	349	361	4.2e-33	90	85	(Z97342) hypothetical protein [Arabidopsis thaliana]
9913	ATL8C44588	ATL8On11849	964-1	g4262158	125	220	1.1e-16	66	5	(AC005275) hypothetical protein [Arabidopsis thaliana]
9914	ATL8C44587	ATL8On11850	1-658	g3421384	727	797	2.7e-79	94	38	(AF081967) IAA-Ala hydrolase, IAA-amino acid hydrolase [Arabidopsis thaliana]
9915	ATL8C11164	ATL8On11851	568-1698	g3510254	1338	675	8.1e-129	69	100	(AC005101) putative zinc transporter [Arabidopsis thaliana]
9915	ATL8C11164	ATL8On11852	1972-2165	g483e911	126	177	9.6e-13	56	15	(AC007153) 55420 [Arabidopsis thaliana]
9916	ATL8C11162	ATL8On11853	162-672	g4263705	377	391	2.8e-36	47	21	(AC006223) putative disease resistance protein [Arabidopsis thaliana]
9917	ATL8C11165	ATL8On11854	2025-1	g3608135	932	773	9.3e-77	75	91	(AC005314) putative DNA binding factor [Arabidopsis thaliana]
9918	ATL8C11167	ATL8On11855	393-653	g2244958	468	468	1.9e-44	100	99	(Z97340) hypothetical protein [Arabidopsis thaliana]
9919	ATL8C11166	ATL8On11856	2925-1267	g3193321	1982	2068	1.6e-219	82	100	(AF069299) No definition line found [Arabidopsis thaliana]
9920	ATL8C11169	ATL8On11857	1213-2093	g4567296	2152	1788	2.6e-184	80	100	(AC006918) putative Athila retroelement ORF1 protein [Arabidopsis thaliana]
9921	ATL8C28550	ATL8On11858	520-1	g4335720	596	655	3.0e-63	74	14	(AC006245) putative reverse transcriptase Tal-1 [Arabidopsis thaliana]
9922	ATL8C11168	ATL8On11859	1-405	g4544460	454	345	2.1e-31	65	42	(AC006592) putative reverse transcriptase [Arabidopsis thaliana]
9923	ATL8C28551	ATL8On11860	729-199	g4467359	882	641	6.8e-62	97	16	(AJ002685) Phosphatidylinositol 4-kinase [Arabidopsis thaliana]
9924	ATL8C28553	ATL8On11861	491-1	g2653885	491	507	7.2e-48	96	13	(AF027408) phospholipase D-gamma; PLD-gamma [Arabidopsis thaliana]
9925	ATL8C28554	ATL8On11862	1742-1	g2864623	1746	1751	2.1e-180	68	36	(AL021811) putative protein [Arabidopsis thaliana]
9925	ATL8C28554	ATL8On11863	547-2215	g28e4620	328	271	1.5e-23	72	35	(AL021811) hypothetical protein [Arabidopsis thaliana]
9925	ATL8C28554	ATL8On11864	2521-3748	g2864621	137	169	6.3e-12	48	21	(AL021811) hypothetical protein [Arabidopsis thaliana]
9925	ATL8C28554	ATL8On11865	1332-3748	g4544372	351	454	2.1e-41	42	13	(AC006920) putative reverse transcriptase [Arabidopsis thaliana]
9925	ATL8C28554	ATL8On11866	2658-3748	g4406792	119	223	2.5e-17	39	14	(AC006304) putative reverse transcriptase [Arabidopsis thaliana]
9926	ATL8C44591	ATL8On11867	1824-3724	g2583131	1164	1345	2.3e-137	52	100	(AC002387) putative pectinesterase [Arabidopsis thaliana]
9927	ATL8C28555	ATL8On11868	859-1	g4914332	1090	1094	4.0e-111	77	45	(AC005489) F14N23.18 [Arabidopsis thaliana]

ATTACHMENT E

>nucleotides 2536 to 3210 of SEQ ID NO: 5272
AACGTTGTCGTTTTCAGCCCATCCTTCCTCCGAATCCAGCGCCACCGTCTAAGCTGCTGCGTCATTGCACGCGCCA
ATTTGCTTTCAACCGCTCGAATCATCCCAGCTGAAACTCCAGTCACATCTTCTACTTTCTTTAAATTCTGCCACGTC
GTCGTGTTCTTAACGCCGAACCAAAACGCCGCCGCTAAGAACACTCTCTTCGTCGCTCTTGGCCTCGTCTCCACAGC
CAAAGCCAAAGACGCATATGAAACGACAGCGTTTGTTAAATCCCTGTTTAGTCCTAACTTACCACCAATTTACAA
AAATGCCATCCGCCACCGTAACCGCAACGGCCTTGGCATTCACTCTGTTTTCCCTCCCTCGCGCTCTGTTTACGTCA
CGCGTCGTTGACGATAGCTCGGAGCTTGAGACACAGTCAAGAGACGAGCAGCAAGAAGAAGACGACGATTCTGAACA
ACATGTTGTTCGTGGAGGCCAAGGAAGAAGAGGACCAGAAACGAAATTTTGAGTAAGAGATTTGCAATTTGGGCAAA
TGACACGCCGGAAATGACGAGCGAAGAGAAAATTGAGGCATGGAACTTAGCGTCACAAGAACGGCAGAGGAAGGCA
GAGTCCGCGGCACAATGGAGATCAGCTTCGGCACCACAAAGCTCGCAAAAGCTCACCAT

>Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
ATGGTGAGCTTTTGCGAGCTTTGTGGTGCCGAAGCTGATCTCCATTGTGCCGCGGACTCT
GCCTTCCTCTGCCGTTCTTGTGACGCTAAGTTCCATGCCTCAAATTTTCTCTTCGCTCGT
CATTTCCGGCGTGTCATTTGCCCAAAATTGCAAATCTCTTACTCAAAATTTCGTTTCTGGT
CCTCTTCTTCCTTGGCCTCCACGAACAACATGTTGTTCAGAATCGTCGTCTTCTTCTTGC
TGCTCGTCTCTTGACTGTGTCTCAAGCTCCGAGCTATCGTCAACGACGCGTGACGTAAAC
AGAGCGCGAGGGAGGGAAAACAGAGTGAATGCCAAGGCCGTTGCGGTTACGGTGGCGGAT
GGCATTTTTGTAAATTGGTGTGGTAAGTTAGGACTAAACAGGGATTTAACAAACGCTGTC
GTTTCATATGCGTCTTTGGCTTTGGCTGTGGAGACGAGGCCAAGAGCGACGAAGAGAGTG
TTCTTAGCGGCGGCGTTTTGGTTCGGCGTTAAGAACACGACGACGTGGCAGAATTTAAAG
AAAGTAGAAGATGTGACTGGAGTTTCAGCTGGGATGATTCGAGCGGTTGAAAGCAAATTG
GCGCGTGCAATGACGCAGCAGCTTAGACGGTGGCGCGTGGATTCGGAGGAAGGATGGGCT
GAAAACGACAACGTT

>G1988 in US 2008/0010703 (hereinafter "Publ")
ATGGTGAGCTTTTGCGAGCTTTGTGGTGCCGAAGCTGATCTCCATTGTGCCGCGGACTCTGCCTTCCTCTGCCGTTC
TTGTGACGCTAAGTTCCATGCCTCAAATTTTCTCTTCGCTCGTCATTTCCGGCGTGTCATCTGCCCAAATTGCAAAT
CTCTTACTCAAAATTTCGTTTCTGGTCCTCTTCTTCCTTGGCCTCCACGAACAACATGTTGTTCAGAATCGTCGTCT
TCTTCTTGCTGCTCGTCTCTTGACTGTGTCTCAAGCTCCGAGCTATCGTCAACGACGCGTGACGTAAACAGAGCGCG
AGGGAGGGAAAACAGAGTGAATGCCAAGGCCGTTGCGGTTACGGTGGCGGATGGCATTTTTGTAAATTGGTGTGGTA
AGTTAGGACTAAACAGGGATTTAACAAACGCTGTCGTTTCATATGCGTCTTTGGCTTTGGCTGTGGAGACGAGGCCA
AGAGCGACGAAGAGAGTGTTCTTAGCGGCGGCGTTTTGGTTCGGCGTTAAGAACACGACGACGTGGCAGAATTTAAA
GAAAGTAGAAGATGTGACTGGAGTTTCAGCTGGGATGATTCGAGCGGTTGAAAGCAAATTGGCGCGTGCAATGACGC
AGCAGCTTAGACGGTGGCGCGTGGATTCGGAGGAAGGATGGGCTGAAAACGACAACGTTTGA

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
ATGGTGAGCTTTTGCGAGCTTTGTGGTGCCGAAGCTGATCTCCATTGTGCCGCGGACTCTGCCTTCCTCT 70
G1988inPubl
ATGGTGAGCTTTTGCGAGCTTTGTGGTGCCGAAGCTGATCTCCATTGTGCCGCGGACTCTGCCTTCCTCT 70

Consensus
ATGGTGAGCTTTTGCGAGCTTTGTGGTGCCGAAGCTGATCTCCATTGTGCCGCGGACTCTGCCTTCCTCT 70

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
GCCGTTCTTGTGACGCTAAGTTCCATGCCTCAAATTTTCTCTTCGCTCGTCATTTCCGGCGTGTCATTTG 140
G1988inPubl
GCCGTTCTTGTGACGCTAAGTTCCATGCCTCAAATTTTCTCTTCGCTCGTCATTTCCGGCGTGTCATCTG 140

Consensus
GCCGTTCTTGTGACGCTAAGTTCCATGCCTCAAATTTTCTCTTCGCTCGTCATTTCCGGCGTGTCATCTG 140

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
CCCAAATTGCAAATCTCTTACTCAAAATTTCGTTTCTGGTCCTCTTCTTCCTTGGCCTCCACGAACAACA 210

G1988inPubl
CCCAAATTGCAAATCTCTTACTCAAAATTTCGTTTCTGGTCCTCTTCTTCCTTGGCCTCCACGAACAACA 210

Consensus
CCCAAATTGCAAATCTCTTACTCAAAATTTCGTTTCTGGTCCTCTTCTTCCTTGGCCTCCACGAACAACA 210

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
TGTTGTTCAGAATCGTCGTCTTCTTCTTGCTGCTCGTCTCTTGACTGTGTCTCAAGCTCCGAGCTATCGT 280
G1988inPubl
TGTTGTTCAGAATCGTCGTCTTCTTCTTGCTGCTCGTCTCTTGACTGTGTCTCAAGCTCCGAGCTATCGT 280

Consensus
TGTTGTTCAGAATCGTCGTCTTCTTCTTGCTGCTCGTCTCTTGACTGTGTCTCAAGCTCCGAGCTATCGT 280

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
CAACGACGCGTGACGTAAACAGAGCGCGAGGGAGGGAAAACAGAGTGAATGCCAAGGCCGTTGCGGTTAC 350
G1988inPubl
CAACGACGCGTGACGTAAACAGAGCGCGAGGGAGGGAAAACAGAGTGAATGCCAAGGCCGTTGCGGTTAC 350

Consensus
CAACGACGCGTGACGTAAACAGAGCGCGAGGGAGGGAAAACAGAGTGAATGCCAAGGCCGTTGCGGTTAC 350

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
GGTGGCGGATGGCATTTTTGTAAATTGGTGTGGTAAGTTAGGACTAAACAGGGATTTAACAAACGCTGTC 420
G1988inPubl
GGTGGCGGATGGCATTTTTGTAAATTGGTGTGGTAAGTTAGGACTAAACAGGGATTTAACAAACGCTGTC 420

Consensus
GGTGGCGGATGGCATTTTTGTAAATTGGTGTGGTAAGTTAGGACTAAACAGGGATTTAACAAACGCTGTC 420

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
GTTTCATATGCGTCTTTGGCTTTGGCTGTGGAGACGAGGCCAAGAGCGACGAAGAGAGTGTTCTTAGCGG 490
G1988inPubl
GTTTCATATGCGTCTTTGGCTTTGGCTGTGGAGACGAGGCCAAGAGCGACGAAGAGAGTGTTCTTAGCGG 490

Consensus
GTTTCATATGCGTCTTTGGCTTTGGCTGTGGAGACGAGGCCAAGAGCGACGAAGAGAGTGTTCTTAGCGG 490

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
CGGCGTTTTGGTTCGGCGTTAAGAACACGACGACGTGGCAGAATTTAAAGAAAGTAGAAGATGTGACTGG 560
G1988inPubl
CGGCGTTTTGGTTCGGCGTTAAGAACACGACGACGTGGCAGAATTTAAAGAAAGTAGAAGATGTGACTGG 560

Consensus
CGGCGTTTTGGTTCGGCGTTAAGAACACGACGACGTGGCAGAATTTAAAGAAAGTAGAAGATGTGACTGG 560

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
AGTTTCAGCTGGGATGATTCGAGCGGTTGAAAGCAAATTGGCGCGTGCAATGACGCAGCAGCTTAGACGG 630
G1988inPubl
AGTTTCAGCTGGGATGATTCGAGCGGTTGAAAGCAAATTGGCGCGTGCAATGACGCAGCAGCTTAGACGG 630

Consensus
AGTTTCAGCTGGGATGATTCGAGCGGTTGAAAGCAAATTGGCGCGTGCAATGACGCAGCAGCTTAGACGG 630

Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272
TGGCGCGTGGATTCGGAGGAAGGATGGGCTGAAAACGACAACGTT--- 675
G1988inPubl
TGGCGCGTGGATTCGGAGGAAGGATGGGCTGAAAACGACAACGTTTGA 678

Consensus
TGGCGCGTGGATTCGGAGGAAGGATGGGCTGAAAACGACAACGTTtga 678

> Protein Sequence encoded by Reverse complement of nucleotides 2536 to 3210 of SEQ ID NO: 5272 (hereinafter "Prot Seq 5272 RC")
MVSPCELCGAEADLHCAADSAFLCRSCDAKFHASNFLFARHFRRVICPNCKSLTQNFVSG
PLLPWPPRTTCCSESSSSSCCSSLDCVSSSELSSTTRDVNRARGRENRVNAKAVAVTVAD
GIFVNWCGKLGLNRDLTNAVVSYASLALAVETRPRATKRVFLAAAFWFGVKNTTTWQNLK
KVEDVTGVSAGMIRAVESKLARAMTQQLRRWRVDSEEGWAENDNV

>Protein Sequence G1988 in Publ
MVSPCELCGAEADLHCAADSAFLCRSCDAKFHASNFLFARHFRRVICPNCKSLTQNFVSG
PLLPWPPRTTCCSESSSSSCCSSLDCVSSSELSSTTRDVNRARGRENRVNAKAVAVTVAD
GIFVNWCGKLGLNRDLTNAVVSYASLALAVETRPRATKRVFLAAAFWFGVKNTTTWQNLK
KVEDVTGVSAGMIRAVESKLARAMTQQLRRWRVDSEEGWAENDNV*

Prot Seq 5272 RC
MVSPCELCGAEADLHCAADSAFLCRSCDAKFHASNFLFARHFRRVICPNCKSLTQNFVSGPLLPWPPRTT 70
Protein Sequence G1988 in Publ
MVSPCELCGAEADLHCAADSAFLCRSCDAKFHASNFLFARHFRRVICPNCKSLTQNFVSGPLLPWPPRTT 70

Consensus
MVSPCELCGAEADLHCAADSAFLCRSCDAKFHASNFLFARHFRRVICPNCKSLTQNFVSGPLLPWPPRTT 70

Prot Seq 5272 RC
CCSESSSSSCCSSLDCVSSSELSSTTRDVNRARGRENRVNAKAVAVTVADGIFVNWCGKLGLNRDLTNAV 140
Protein Sequence G1988 in Publ
CCSESSSSSCCSSLDCVSSSELSSTTRDVNRARGRENRVNAKAVAVTVADGIFVNWCGKLGLNRDLTNAV 140

Consensus
CCSESSSSSCCSSLDCVSSSELSSTTRDVNRARGRENRVNAKAVAVTVADGIFVNWCGKLGLNRDLTNAV 140

Prot Seq 5272 RC
VSYASLALAVETRPRATKRVFLAAAFWFGVKNTTTWQNLKKVEDVTGVSAGMIRAVESKLARAMTQQLRR 210
Protein Sequence G1988 in Publ
VSYASLALAVETRPRATKRVFLAAAFWFGVKNTTTWQNLKKVEDVTGVSAGMIRAVESKLARAMTQQLRR 210

Consensus
VSYASLALAVETRPRATKRVFLAAAFWFGVKNTTTWQNLKKVEDVTGVSAGMIRAVESKLARAMTQQLRR 210

Prot Seq 5272 RC
WRVDSEEGWAENDNV 225

Protein Sequence G1988 in Publ
WRVDSEEGWAENDNV 225

Consensus
WRVDSEEGWAENDNV 225